

We Claim:

1. A starch-reducing rice cooker comprising:

5 a pot comprising a lower compartment and an upper boiling chamber having a top opening;

a partition separating said lower compartment from said upper boiling chamber;

10 a perforated basket within said upper boiling chamber for containing rice to be cooked, said upper boiling chamber adapted to contain more than sufficient water to immerse said rice for cooking;

a cover for said top opening, said cover having a means for spraying cool rinsing water onto said rice within said basket after cooking of said rice is complete;

15 means, sandwiched within said partition, for heating the water within said upper boiling chamber to a boiling temperature;

a discharge valve within said partition for communicating between said upper boiling water chamber and said lower compartment;

20 means programmed to detect when boiling of water in said upper boiling temperature starts and maintain boiling for a time required to properly cook said rice based upon the boiling temperature of said water;

25 means for activating said discharge valve after cooking is completed for discharging water through said discharge valve from said upper boiling chamber into said lower compartment.

30 2. The rice cooker of claim 1 wherein said means programmed to detect when boiling of water starts comprises a temperature sensor immersed in the water, said temperature sensor detecting current temperature, said means further comprising a microcomputer comparing said current temperature to previous temperature.

35 3. The rice cooker of claim 1, wherein said spraying means

in said cover comprises a reservoir having said cool rinsing water, means for pressurizing said rinsing water within said reservoir, and a spray valve upon actuation for spraying said rinsing water onto said rice in said upper boiling chamber.

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4. The rice cooker of claim 3 in which said spray valve is solenoid actuated.

5. The rice cooker of claim 4 having a housing mounted on
10 said pot for delivering electrical power to said heating means within said partition.

6. The rice cooker of claim 5 in which said housing is connected to a source of AC electric power and said housing
15 comprises a means for delivering said AC electric power to said heating means and convert AC electric power to low voltage electricity for operation of said solenoid actuated valves and said programmed means.

20 7. The rice cooker of claim 6 in which said cover and pot have electrical connectors which engage when said cover is in place on said pot for delivering electrical power to the solenoid actuated valve in said cover.

25 8. The rice cooker of claim 1 having an onboard computer for automating the operation of said means for heating said water and the solenoid actuated valves, and a dial operated input for setting cooking length dependent upon the type of rice being cooked, the amount of rice being prepared and user preference.

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9. The rice cooker of claim 1 further comprising a means of selecting between at least two levels of starch content.

10. The rice cooker of claim 9 wherein said means of
35 selecting comprises a rotary dial having numeric or alphabetic

indicia representing levels of starch content.

11. The rice cooker of claim 9 wherein said means of selecting comprises a digital selector having numeric or
5 alphabetic indicia representing levels of starch content.

12. The rice cooker of claim 9 wherein at least one selectable level of starch content triggers the de-activation of said means for activating said discharge valve.

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13. The rice cooker of claim 1 further comprising a means of agitating said perforated basket in said upper portion, said means of agitating comprising at least one agitator.

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14. The rice cooker of claim 13 wherein said means of agitating contacts an outer surface portion of said upper portion of said pot and straddles the lip portion of said upper portion of said pot receiving a portion of a rim of said perforated basket.

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15. The rice cooker of claim 14 wherein said at least one agitator contacts said outer surface portion with at least one welded bracket.

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16. The rice cooker of claim 13 wherein said at least one agitator comprises a voice-coil actuator.

17. The rice cooker of claim 13 wherein said at least one agitator is chosen from the group consisting of a voice-coil
30 actuator, a rotary motor driving an eccentric weight, a piezoelectric stack, or a bending transducer.

18. The rice cooker of claim 13 wherein said at least one agitator comprises three agitators, each said agitator being
35 spaced approximately 120 degrees about the circumference of said

perforated basket.

19. The rice cooker of claim 13, wherein said at least one agitator further comprises at least one passive spring.

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20. The rice cooker of claim 13, wherein said means of agitating operates for approximately 2 seconds at intervals of approximately 5 seconds.

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21. A starch-reducing rice cooker comprising:

a pot comprising a lower compartment and an upper boiling chamber having a top opening;

a partition separating said lower compartment from said upper boiling chamber;

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a perforated basket within said upper boiling chamber for containing rice to be cooked, said upper boiling chamber adapted to contain more than sufficient water to immerse said rice for cooking;

a cover for said top opening;

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means, sandwiched within said partition, for heating the water within said upper boiling chamber to a boiling temperature;

a discharge valve within said partition for communicating between said upper boiling water chamber and said lower compartment;

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means programmed to detect when boiling of water in said upper boiling temperature starts and maintain boiling for a time required to properly cook said rice based upon the boiling temperature of said water;

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means for activating said discharge valve after cooking is completed for discharging water through said discharge valve from said upper boiling chamber into said lower compartment.

22. The rice cooker of claim 21 wherein said means programmed to detect when boiling of water starts comprises a temperature sensor immersed in the water, said temperature sensor

detecting current temperature, said means further comprising a microcomputer comparing said current temperature to previous temperature.

5 23. The rice cooker of claim 21 having an onboard computer for automating the operation of said means for heating said water, and a dial operated input for setting cooking length dependent upon the type of rice being cooked, the amount of rice being prepared and user preference.

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 24. The rice cooker of claim 21 further comprising a means of agitating said perforated basket in said upper portion, said means of agitating comprising at least one agitator.

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 25. The rice cooker of claim 24 wherein said means of agitating contacts an outer surface portion of said upper portion of said pot and straddles the lip portion of said upper portion of said pot receiving a portion of a rim of said perforated basket.

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 26. The rice cooker of claim 24 wherein said at least one agitator contacts said outer surface portion with at least one welded bracket.

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 27. The rice cooker of claim 24 wherein said at least one agitator comprises a voice-coil actuator.

 28. The rice cooker of claim 24 wherein said at least one agitator is chosen from the group consisting of a voice-coil
30 actuator, a rotary motor driving an eccentric weight, a piezoelectric stack, or a bending transducer.

 29. The rice cooker of claim 24 wherein said at least one agitator comprises three agitators, each said agitator being
35 spaced approximately 120 degrees about the circumference of said

perforated basket.

30. The rice cooker of claim 24, wherein said at least one agitator further comprises at least one passive spring.

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31. The rice cooker of claim 24, wherein said means of agitating operates for approximately 2 seconds at intervals of approximately 5 seconds.

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32. The method of cooking rice to reduce the amount of starch remaining in the cooked rice, comprising the steps of:
placing uncooked rice in a perforated basket;
inserting said basket into a pot through a top opening of said pot;

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filling said pot with more than sufficient water to cover said rice;

covering the top opening of said pot with a cover comprising a reservoir of cool rinsing water, said reservoir having a solenoid actuated spray valve;

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pressurizing said reservoir;

setting a control selector for the time of cooking based upon the type of rice being cooked, the amount of said rice, and preferences of a user;

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heating water within said pot to boiling, and maintaining said boiling for a predetermined period of time sufficient for cooking said rice in accordance with the setting of said control dial;

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discharging boiled water in said pot through a bottom opening in said pot, said bottom opening being controlled by a solenoid actuated discharge valve which is activated;

actuating said spray valve to spray cool rinsing water from said reservoir onto said rice within said basket; and

maintaining said discharge valve open until the rinsing water is discharged.

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33. The method of claim 32 in which said rice is maintained at an elevated temperature until the pot is shut down.

34. The method of claim 32 in which a first light on said
5 pot indicates that cooking is taking place and a second light on said pot indicates when cooking is complete and the cooked rice is being maintained at said elevated temperature.

35. The method of cooking rice to reduce the amount of
10 starch remaining in the cooked rice, comprising the steps of:
 placing uncooked rice in a perforated basket;
 inserting said basket into a pot through a top opening of said pot; said pot having an upper boiling chamber and a lower compartment;
15 filling said upper chamber with more than sufficient water to cover said rice;
 covering the top opening of said pot with a cover;
 setting a control dial for the time of cooking based upon the type of rice being cooked, the amount of said rice, and
20 preferences of a user;
 heating water within said pot to boiling, and maintaining said boiling for a predetermined period of time sufficient for cooking said rice in accordance with the setting of said control dial;
25 discharging boiled water, after cooking of the rice is complete, in said upper chamber of said pot through a bottom opening in said upper chamber to said lower compartment.

36. The method of claim 35 in which said rice is
30 maintained at an elevated temperature until the pot is shut down.

37. The method of claim 35 in which a first light on said pot indicates that cooking is taking place and a second light on said pot indicates when cooking is complete and the cooked rice
35 is being maintained at said elevated temperature.